

Title:

PHENIX results on  $J/\psi$  production in Au+Au and Cu+Cu collisions at  $\sqrt{s_{NN}} = 200$  GeV

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Abstract:

Heavy quarkonia production is predicted to be sensitive to the formation of the quark gluon plasma in relativistic heavy ion collisions via competing mechanisms such as color screening and/or quark recombination. The PHENIX collaboration has measured  $J/\psi$  decay into lepton pairs in Au+Au and Cu+Cu collisions at  $\sqrt{s_{NN}} = 200$  GeV. The nuclear modification factor  $R_{AA}$  for the  $J/\psi$  is obtained by comparing Au+Au or Cu+Cu collisions to p+p collisions. The  $R_{AA}$  dependence over centrality, transverse momentum and rapidity will be presented both at forward rapidity ( $1.2 < |\eta| < 2.2$ ) using  $J/\psi \rightarrow \mu^+\mu^-$  and at mid rapidity ( $|\eta| < 0.35$ ) using  $J/\psi \rightarrow e^+e^-$ . It will be compared to theoretical predictions and to results obtained from collisions with lighter nuclei.